

EIRWIND Technical Lead Team in MaREI Centre

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EIRWIND project: co-designing opportunities towards the development of IRish offshore WIND Centre of Marine and Renewable Energy (MaREI Centre), ERI, University College Cork, Beaufort Building, Haulbowline Road, Ringaskiddy, Co. Cork, Ireland.

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Feedback on Public Consultation on the Mid-term Review of the Offshore Renewable Energy Development Plan (OREDP)

On having studied the following OREDP documents provided in the public consultation webpage [1]:

1. DCCAE website (accessed 04.11.2017): www.dccae.gov.ie/en-ie/energy/consultations/Pages/Public-Consultation-on-the-Draft-Mid-Term-review-of-the-OREDP.aspx
2. Mid-term Review of the Offshore Renewable Energy Development Plan (OREDP Review Report), DCCAE, 24 October 2017.
3. Offshore Renewable Energy Development Plan, DCCAE, February 2014 (OREDP 2014).

The team kindly acknowledge the efforts of DCCAE, SEAI and the supporting organisations in preparing the comprehensive documents. The team's feedback is summarised as follows:

Summary of Feedback:

Setting out key principles, policy actions and enablers for delivery of Ireland's significant potential in offshore renewable energy is essential that helps simultaneous achievement of a number of Ireland's targets including reduction of greenhouse gas emissions, energy security and diversity, job creation, and sustainable development. We have therefore provided answer to most of the 24 public consultation questions. We suggest several relevant additions: organisations to the Offshore Renewable Energy Steering Group (ORESG), external stakeholders to attend plenary sessions with the ORESG, annual work programmes for the ORESG working groups, and supplementary areas for the Job Creation Working Group. The broader term "Offshore Renewable Energy" (ORE) containing both offshore wind energy and ocean energy should be used. More exchequer support for the R&D in floating wind and its supply chain, for the domestic and international energy transmission networks (electricity and gas), and for inspection, maintenance and monitoring systems is necessary. Floating wind needs support for large scale deployments (to the order of 500 MW) to ensure that it is viable and to drive expansion of the supply chain, electricity and gas markets and investors. The development of supply chains for ORE, and offshore wind in particular, and ensuring that Ireland is open for business and international collaboration in ORE are particularly important. The EIRWIND project will be building capacity towards the development of Irish offshore renewable energy. The information and knowledge that develops will be made available to EIRWIND partners and policy advisory group.

Action 1: Put in place a robust Governance Structure for the OREDP

Offshore Renewable Energy Steering Group (ORESG, Page 7): In order to cover sufficiently the steering fields relevant to the development of offshore renewable energy, the following organisations should be included:

1. An organisation/agency for maritime logistic development, for example, the Irish Maritime Development Office (IMDO).
2. An organisation/agency for management/development of Irish ports.

The following additional external stakeholders should attend plenary sessions with the ORESG (Page 8 [1]), in order to cover sufficiently the stakeholders relevant to/support for the development of offshore renewable energy:

1. An association of maritime logistics or shipping.
2. An association of Irish ports.
3. An association/group of Irish electricity network developers
4. An association/group of Irish gas network developers

The following additional annual work programmes should be taken by the ORESG working groups (Page 8 [1]):

1. Opportunity and constraints for domestic electricity networks for the deployment of ORE in Ireland
2. Opportunity and constraints for domestic gas networks for the deployment of ORE in Ireland
3. Opportunity and constraints for international electricity and gas networks for the deployment of ORE in Ireland.
4. Opportunity and constraints for maritime logistics and ports sector and for survey, inspection and monitoring sector for the deployment of ORE in Ireland.

The following additional areas should be included in the Job Creation Working Group focus (page 9 [1]):

1. Develop a strategic plan on opportunities for attracting international students and professionals to Ireland for education and training in ORE development.
2. Develop a strategic plan on opportunities to export experts and supply chain internationally related to the ORE development.
3. Develop papers on increasing energy security and reducing green gas emissions thanks to the development of ORE. Those papers should be governed directly by the ORESG.

The following identified challenges should be added (page 10 [1]):

1. Lack of institutional lessons-learned from domestic completed and on-going projects.
2. Lack of institutional lessons-learned internationally, especially from UK, Germany, France and particularly infrastructure networks and incentives/supports.

Public Consultation Question 1. *Do you have any suggestions or additional measures to support and enhance the governance structures of the OREDP?*

Answer: Yes, we have a number of both suggestions and additional measures, as stated previously in the feedback to Action 1. In addition, we would emphasise that the Environment and Infrastructure Working Groups, when considering licensing and environmental monitoring regimes with a view to informing design of the new regime proposed under Maritime Area and Foreshore (Amendment) Bill, should link with the Department of Housing, Planning and Local Government officials responsible for, and working towards implementation of, Maritime Spatial Planning (MSP) and the National Planning Framework (NPF). Both the consenting system (foreshore sites and grid) and future strategic planning systems (MSP and NPF) need to work together. Industry, including energy network developers, need to be involved in the design of the MSP process to future-proof the needs of the sector from a strategic planning perspective, which is also central to delivery of many of the objectives of the OREDP.

Action 2: Increase Exchequer Support for Ocean Research, Development and Demonstration

Public Consultation Question 2. *Do you think that the Exchequer support for Ocean Energy RD&D has been sufficient?*

Answer: No, we do not think that. Firstly, we would suggest a change from “Ocean” to “Offshore” in the action title because the latter is broader and refers to both offshore wind, energy harvested from wind, and ocean energy. Moreover, the name of the OREDP itself contains “Offshore”. There should be more Exchequer support for “Offshore” Energy RD&D, particular for the development of floating wind and its supply chain, domestic and international energy transmission networks (electricity and gas).

Public Consultation Question 3. *Has the distribution of the Exchequer support been appropriate and can you suggest alternative areas that require additional Exchequer support?*

Answer: We would suggest additional Exchequer support for the areas mentioned in the answer to Question 2. The reason is that offshore wind, particularly floating wind, is very advantageous and has very high potential in Ireland.

Action 2.1: Atlantic Marine Energy Test Site (AMETS)

We strongly agree with the stakeholder suggestions, specifically the following:

- Address the perception that there is duplication of effort in progressing AMETS and WestWave.
- Add floating wind and hybrid ORE technologies to the AMETS foreshore lease.
- Addition of subsea observation capabilities.

Public Consultation Question 4. *Do you think sufficient progress has been made on the development of the Atlantic Marine Energy Test Site in County Mayo?*

Answer: No, we do not think that. More progress should be made on floating wind, grid demo and subsea observations, as suggested by the stakeholders mentioned above.

Action 2.2: Galway and Cork Test Sites

Public Consultation Question 5. Do you agree that significant progress has been made on the Galway Bay Marine and Renewable Energy Test Site and that it is having a positive impact on the development of the offshore renewable energy sector in Ireland?

Based on recent events, we do not agree with the statement above. The current situation is probably not through the fault of any individual actors (SEAI, MI, SmartBay) but rather lack of a fit-for-purpose consenting system coupled with what could be described as a branding issue. In addition, the stakeholder suggestions regarding the addition of floating offshore wind and hybrid technologies, and subsea observation and inspection, repair and maintenance (IRM) should be taken into account.

Action 2.3: Integrated Maritime Energy Resource Cluster

We strongly agree with the stakeholder suggestions on setting up of a marine cluster.

Public Consultation Question 6. Do you think that there is a positive impact from the development of the MaREI Centre and Lir National Ocean Test Facility?

Answer: Yes, we do think that. In addition, there have been positive impacts from the development of the Irish Maritime Energy Resource Cluster (IMERC) but this has been disbanded. It is important that this development work be continued and facilitated in order to promote the development of Irish supply chain and industry for offshore renewable energy.

Action 2.4: Prototype Development Fund

Public Consultation Question 8. What if any improvements would you suggest?

Answer: We would suggest the following improvements:

- Validated numerical simulation and optimisation of each prototype should be required before submitting an application for PDF. There should also be a smaller fund for numerical simulation and optimisation should it be necessary.
- There should be a PDF for development of supply chain technologies, especially for operation and maintenance, for example the devices for inspection, repair and maintenance of offshore and subsea systems.

Action 2.5: Additional Exchequer Support Requirement

Public Consultation Question 9. Do you have any suggestions for additional Exchequer support required for the development of the offshore renewable energy sector in Ireland?

Answer: We would suggest that:

- Besides the support for the development of ORE technology, there should be support for the development of energy distribution networks and supply chain.
- There should be additional exchequer support for development of supply chain technologies, especially for operation and maintenance, for example for inspection, repair and maintenance of offshore and subsea systems.

Action 3: Introduce Initial Market Support Tariff for Ocean Energy

Public Consultation Question 10. *Do you have any suggestions on how to enhance or further implement support tariffs for this sector?*

Answer: Please refer to the full feedback document (6 page length) on Renewable Electricity Support Scheme (RESS) submitted by Eirwind Technical Lead Team on 10 November 2017. Several key points from our submission are relevant including:

1. Offshore wind should be explicitly classified into two types, namely: “Offshore fixed-base/bottom wind” and “Offshore floating wind”. There are more differences than similarities between the two types, especially their deployment/construction, operation and maintenance that significantly influence on the overall costs.
2. Floating wind needs support for large scales (to the order of 500MW) to ensure that it is a viable, and to trigger:
 - Supply chain drivers to be involved and sustainably developed.
 - Irish, British and French markets in electricity.
 - Gas markets (electricity generators, heating and transport) in Ireland, the UK and France. The new hydrogen technologies are going to be mature and the natural gas fields in Ireland are running out.
 - Green investors.
3. The development of supply chain for offshore wind is important to the development and sustainability of Ireland’s economy and community where various enterprise opportunities and jobs will be created.
4. Regarding the community policy, the Irish experience of co-ownership is restricted to onshore developments. It should not be assumed that best practice observed from onshore projects, is readily transferable to offshore environments.
5. The Eirwind project will be building capacity towards the development of Irish offshore renewable energy. The information and knowledge that arises will be made available to Eirwind partners and policy advisory group.

Action 4: Develop Renewable Electricity Export Markets

The following points should be also identified as a challenge:

1. There is lack of focus on grid capacity for ORE. One of the key challenges to offshore wind energy development is the lack of capacity in the Irish grid, it will have one of the highest wind energy penetrations in the world by 2020.

Public Consultation Question 11: *Do you think that Ireland should develop offshore renewable energy resources to export electricity?*

Answer: Yes, we do think that. Offshore renewable energy resources in Ireland, particularly offshore wind, has more potential and presents significant advantages over other countries. The total amount of offshore wind farm development is 34.8 GW – 39 GW without likely significant adverse effects on the environment (OREDP 2014). There is both high wind speed and full load

hours in Irish offshore wind. Besides, there are nearshore floating wind sites and those have high potential for cost reduction. Additionally, there is no or little icing time in Irish offshore wind sites. Icing problems in offshore wind sites in the North sea, Scottish seas or other regions have negatively influenced in safety, serviceability and lifetime of the turbine blades and mooring systems, also in health monitoring, operation and maintenance activities

Public Consultation Question 12. *Do you have any suggestions on further measures that can be taken to support the implementation of this action?*

Answer: Yes, we would have the following suggestions:

1. The development of interconnection will be a key requirement to facilitate offshore wind, while there are some references to interconnection in the OREDP review, there is a need to work on developing strong interconnection, which should be focused and supported by the Government.
2. The 500 MW Greenlink interconnector will be the key in facilitating the development of offshore wind in Ireland.
3. Development of future gas network and distribution for Hydrogen should be considered.
4. Serious consideration and work is needed in light of Brexit and the implications this will have for the all-island Single Electricity Market. In terms of offshore renewable energy, it should also be noted that there are no formally agreed maritime boundaries in Loughs Foyle and Carlingford. The existence of a MOU recognising both Government's (Ireland and UK) promotion of ORE development from 2011 does not address this problem.

Action 5: Develop the Supply Chain for the Offshore Renewable Energy Industry in Ireland

Public Consultation Question 13: *Do you think that significant progress has been made, to develop the supply chain for the offshore renewable energy industry in Ireland?*

Answer: No, we do not agree. Significant progress has not been made as yet. This could be significant in relation to offshore wind where there could be significant benefits related to job creation, climate change and energy security.

Public Consultation Question 14. *Do you have any suggestions on how to further implement this action?*

Answer: Yes, we do. Please refer to the full feedback document (6 page length) on Renewable Electricity Support Scheme (RESS) submitted by the Eirwind Technical Lead team on 10 November 2017. The key points of our suggestions regarding the development of the Supply Chain for the ORE Industry in Ireland are as follows:

1. We draw attention to the benefits being derived from enterprise and employment associated with large scale offshore wind projects. The EU Blue Growth strategy identifies offshore wind and ocean renewable energy as among the most promising activities in terms of future potential (OREDP 2014, pp. 18). It categorises offshore wind as being in the growth stage creating new jobs right now. Smaller companies can enter the market and prices of technologies are gradually going down. Economic analysis conducted on behalf of the Sustainable Energy Authority of Ireland (SEAI) indicates three construction job years per MW of offshore wind deployed with 0.6 in ongoing operations and maintenance jobs

(OREDP 2014, pp. 18). The high scenario shows that it would be possible to achieve 4,500 MW from offshore wind and 1,500 MW from wave and tidal devices by 2030 without likely significant adverse effects on the environment (OREDP 2014, pp. 30).

2. The development of a supply chain for offshore wind is important to the development and sustainability of Ireland's economy and community. Enterprise opportunities and jobs will be created from:
 - Turbine components (blades, nacelle, controllers) manufacturers
 - Tower, foundation, moorings
 - Marine and subsea surveying and assessment
 - Maritime, ports and logistics
 - Information and communication technologies (hardware, software, data communications, monitoring systems).
 - Operation and maintenance services, technology and devices (turbines, subsea)
 - Environmental assessment and post-consent monitoring
 - Technology transfer, education and training.
3. To accelerate FDI and encourage partnership of Irish companies with foreign companies.
4. To expand the supply chain to:
 - Maritime ports and logistics
 - Information and communication technologies (hardware, software, data communications, monitoring systems).

Action 6: Communicate that Ireland is Open for Business

Public Consultation Question 15. *Do you think that Ireland has been presented at home and abroad as open for business in offshore renewable energy?*

Answer: It is presented as being open for business but the inability to get projects, or even time-limited deployments, consented goes to prove that the country is not yet open for business. There is a need to promote the country, its resources and capabilities in the longer term.

Public Consultation Question 16. *Do you have any suggestions on how to further implement this action?*

Answer: We would have several suggestions:

1. Foreshore consenting process should be timely and optimal to:
 - Avoid delay in deployment/gird connection of offshore projects.
 - Avoid too many multiple grid connections for each offshore project.
2. Measures to increase public awareness and acceptance should be taken, especially for foreshore consenting. Solutions would be to raise crowd funding (€10-20 each share), to encourage promotion of offshore projects by tourism and community promotion activities.

Action 7: Explore Potential for International Collaboration

Public Consultation Question 18. Do you have any suggestions on how to further implement this action?

Answer: Our suggestions are as follows:

1. It may be a good idea to emphasise that Ireland is active internationally not solely from a technical perspective but also wider collaboration relating to it.
2. There should be more international collaboration with countries that have recognised expertise and experience in offshore renewable energy such as Norway, Denmark, the UK, and Japan in order to transfer institutional lessons-learned from their completed and on-going projects, particularly infrastructure networks and incentive supports.

Action 8: Introduce a New Planning and Consent Architecture for Development in the Marine Area

Public Consultation Question 19. Do you think that sufficient progress has been made on the action to introduce a new planning and consent architecture for development in the marine sector?

Answer: No, we do not. It should also be noted that the current legal definition of foreshore extends to the 12 nautical mile territorial sea limit. Whilst there is no operational system beyond the 12-mile limit, as acknowledged in the mid-term review document, there are issues with the current system as demonstrated by recent experiences with the Galway Bay Test Site.

Public Consultation Question 20. Do you have any suggestions on how to best implement this action?

Answer: The implementation requires enactment of the proposed legislation. This also needs to align with the requirements of the EU's Maritime Spatial Planning Directive and associated Maritime Spatial Plan for Ireland in whatever form that will take.

The implementation of this action will be dealt with in a work package within the EIRWIND project, in collaboration with government departments, agencies, academics and researchers. **The EIRWIND Technical Lead team, the authors of this feedback, will support this action.**

Action 9: Environmental Monitoring

Public Consultation Question 21. Does the progress section capture all the relevant information and activities that have taken place for this action since publication in 2014?

Answer: It should be noted that a number of EU and nationally funded research projects can contribute to learning on the subject of environmental impacts, monitoring and risk-based management. MaREI are involved in the DCCA and NPWS funded ObSERVE programme that provides baseline data on key marine mammals and seabird species which in turn can inform planning, consenting and management decisions. Ireland (through SEAI and MaREI) are represented on the IEA-OES Annex IV Environmental Effects of Wave and Tidal Energy¹ workstream who produce a bi-annual State of the Science report specifically on current knowledge of environmental effects and their management.

We would also suggest that all references to 'landscape' be amended to seascape as this is more pertinent to ocean energy development and can be a source of significant public concern.

Public Consultation Question 22. *Do you have any suggestions on how to further implement this action?*

Answer: There are new legal requirements relating to environmental monitoring under the revised EU EIA Directive, which makes monitoring a legal requirement under EIA for the first time. It would be useful for competent authorities to include consideration of this in any future guidance on consenting and/or environmental monitoring. The recently published DCCAE guidance mentions these legal changes but it is unclear to what extent that guidance must be used by the developer or indeed how it is considered in making decisions on foreshore licences and leases.

Action 10: Ensure Appropriate Infrastructure Development

Public Consultation Question 24. *Do you have any suggestions on how to further implement this action?*

Answer: Our suggestions are as follows:

1. The flagship project idea is important; however it is more important to ensure subsequent projects will be supported through investment and long-term planning.
2. There should be more focus on the development of domestic electricity and gas networks and interconnectors to meet the capacity demand of ORE markets.

¹ See <https://www.ocean-energy-systems.org/oes-projects/task-4-assessment-of-environmental-effects-and-monitoring-efforts-for-ocean-wave-tidal-and-current-energy-systems/>